

Appl. No. 10/636,055
Amdt. Dated October 4, 2004
Reply to Office Action of September 21, 2004

REMARKS/ARGUMENTS

Receipt of the Office Action dated September 21, 2004 is hereby acknowledged. In that Action, the Examiner: 1) rejected claims 1-5, 11-14, and 23-30 as allegedly unpatentable over Richey (U.S. Patent No. 5,988,165) in view of Frye (U.S. Patent No. 6,394,088); 2) rejected claims 18, 19, 33 and 34 as allegedly unpatentable over Richey; 3) rejected claims 37 and 38 as allegedly unpatentable over Todd (U.S. Patent No. 6,446,630); 4) rejected claims 15-17, 20, 22, 31 and 32 as allegedly anticipated by Richey; 5) objected to claim 1 for informalities; and 6) indicated claims 6-10, 21, 35 and 36 would be allowable if rewritten into independent form.

With this Response, Applicants amend claims 1, 2, 6, 9, 15, 21 and 35, and present new claims 39-45. Applicants believe the pending claims are allowable over the art of record and respectfully request reconsideration.

I. AMENDMENTS TO THE SPECIFICATION

With this Response, Applicants present a plurality of amendments to the specification to correct grammatical errors. No new matter is presented.

II. EFFECTIVELY ALLOWED CLAIMS.

With this Response, Applicants amend claims 6, 9, 21 and 35 to be in independent form to include the limitations of the base claim and any intervening claims. Claims 7 and 8 dependent from 6, claim 10 depends from 9, and claim 36 depends from 35. Thus, all the objected-to claims are now in a condition for allowance.

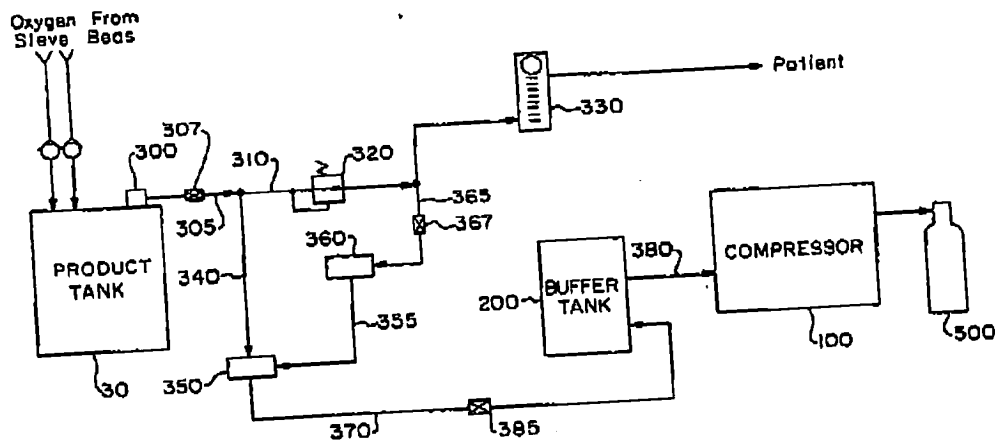
III. CLAIM REJECTIONS

A. Claim 1

Claim 1 stands rejected as allegedly obvious over Richey and Frye. Applicants amend claim 1 to address the objection to the claim, and to more clearly define over Richey's compressor 22.

Richey is directed to an apparatus and method for forming oxygen-enriched gas and compression thereof for high-pressure mobile storage utilization. (Richey Title). Richey's Figure 4, reproduced immediately below, is illustrative of the Richey system.

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In particular, in the Richey system oxygen-enriched gas is provided to the patient from the product tank 30, through a first pressure regulator 300 and a second pressure regulator 320. (Richey Col. 7, lines 28-35). Likewise oxygen-enriched gas is provided to cylinder 500 from the product tank 30, through pressure regulator 300, buffer tank 200 and compressor 100. (Richey Col. 7, lines 46-60). Thus, in Richey oxygen-enriched gas provided to the patient is tapped before the compressor 100. Frye is directed to an oxygen-delivery system with portable oxygen meter. (Frye Title).

Claim 1, by contrast, specifically recites, "an intensifier operable to increase pressure of therapeutic gas provided from an oxygen concentrator or other source of therapeutic gas, the intensifier creates a compressed therapeutic gas stream; a conserver coupled to the compressed therapeutic gas stream, the conserver operable to deliver a bolus of therapeutic gas during inhalation of a patient; and a cylinder connector operable to couple a portable cylinder to the compressed therapeutic gas stream..." Thus, both the conserver and the cylinder connector couple to the compressed therapeutic gas stream created by the intensifier (compressor 100 in Richey terminology). As discussed above, Richey taps the oxygen-enriched gas provided to the patient prior to the intensifier. Thus, if the contention of the Office Action dated September 21, 2004 is that the conserver of Frye merely couples to, or possibly replaces, Richey's flow meter 330 (see Richey's Figure 4 above), then the combination fails to teach or

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fairly suggest the limitations of claim 1 that require the conserver to be coupled to the compressed therapeutic gas stream created by the intensifier.

If, on the other hand, the contention of the Office Action dated September 21, 2004 is that Frye's conserver is placed downstream of Richey's compressor, then the references are improperly combined.

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.

(MPEP §2143.01 (emphasis original)). Richey clearly teaches splitting the oxygen-enriched gas source with a portion going to the patient, and the rest going to the compressor. (See, e.g., Richey Figure 4; Abstract ("The oxygen-enriched gas is stored in a concentrator product tank and can be prioritized so as to supply a patient with a proper amount and surplus or excess enriched oxygen to a compressor.)). Thus, if the contention is that Frye's conserver supplies oxygen-enriched gas from the high pressure side of Richey's compressor 100, this changes the whole principle of operation of Richey of splitting the oxygen-enriched gas between the patient and the compressor, especially taking into account Richey's oxygen sensor placement and shutting down of the compressor when oxygen concentration drops below 84%. (See Richey Col. 7, lines 39-49). Applicants therefore respectfully submit that, because of the changes to the principle of operation if combined in this manner, Richey taken with Frye do not teach or fairly suggest the limitations of claim 1.

Based on the foregoing, Applicants respectfully submit that claim 1, and all claims which depend from claim 1 (claims 2-4 and 11-14), should be allowed.

B. Claim 2

Claim 2 stands rejected as allegedly obvious over Richey in view of Frye. Claim 2 is amended to more clearly define over Richey.

While Richey may show a oxygen sensor 360, Richey's oxygen sensor is clearly shown upstream of the compressor 100.

Claim 2, by contrast, is a system having all the limitations claim 1, and further requiring "a gas sense device fluidly coupled to the cylinder connector and receiving a portion of the

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therapeutic gas of the compressed therapeutic gas stream, the gas sense device operable to detect purity of therapeutic gas... ." Richey taken with Frye fail to teach or fairly suggest such a placement, especially considering that Richey closes supply to his buffer tank, and eventually turns off his compressor, if the oxygen level drops too low. (See Richey Col. 7, lines 39-60).

Claim 2 is dependent from claim 1 and allowable for at least the same reasons, as well as the additional limitations therein.

C. Claim 15

Claim 15 stands rejected as allegedly anticipated by Richey. Claim 15 was amended to more clearly define over Richey's compressor 22, and to remove excess wording.

Richey is directed to an apparatus and method for forming oxygen-enriched gas and compression thereof for high-pressure mobile storage utilization. (Richey Title). In particular, and considering Richey's Figure 4, in the Richey system oxygen-enriched gas is provided to the patient from the product tank 30, through a first pressure regulator 300 and a second pressure regulator 320. (Richey Col. 7, lines 28-35). Likewise oxygen-enriched gas is provided to cylinder 500 from the product tank 30, through pressure regulator 300, buffer tank 200 and compressor 100. (Richey Col. 7, lines 46-60). Thus, in Richey oxygen-enriched gas provided to the patient is tapped before the compressor 100.

Claim 15, by contrast, specifically recites, "compressing a stream of low-pressure therapeutic gas to form a compressed therapeutic gas stream of sufficient pressure to fill a cylinder; providing a first portion of the compressed therapeutic gas stream to fill a cylinder; and providing a second portion of the compressed therapeutic gas stream to a patient in as a bolus of therapeutic gas." The compressed oxygen-enriched gas produced by Richey's compressor 22 (Richey's Figure 1) is only in the range of 15 to 21 PSI. (Richey Col. 1, lines 47-48). The, the oxygen-enriched gas produced by Richey's compressor 22 cannot be the claim compressed therapeutic gas stream as it is of insufficient pressure to fill a cylinder, e.g., on the order of 2200 PSI. (Specification Paragraph [0021]). If the oxygen-enriched gas leaving Richey's compressor 100 is the claimed compressed therapeutic gas, then Richey fails to teach the limitations of "providing a second portion of the compressed therapeutic gas stream to a patient" because in the Richey system all the oxygen-enriched gas leaving the compressor is fed

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to the cylinder. (See Richey Figures 2, 3 and 4). Thus, Richey does not teach or fairly suggest the limitations of claim 15.

Based on the foregoing, Applicants respectfully submit that claim 15, and all claims that depend from claim 15 (claims 16-20 and 22), should be allowed.

D. Claim 16, 17 18 and 19

Claims 16 and 17 stand rejected as allegedly anticipated by Richey. Claims 18 and 19 stand rejected as allegedly obvious over Richey.

Richey's oxygen sensors 265 and 360 test the oxygen-enriched gas as it exits the product tank 30 and before being applied to the compressor 100 or cylinder 500. (Richey Figures 2, 3 and 4).

Claim 16, by contrast, specifically recites, "testing gas within the cylinder." Claim 17, specifically recites, "measuring the oxygen content of gas within the cylinder." Claim 18 specifically recites, "measuring the density of the gas within the cylinder." And claim 19 specifically recites, "measuring the oxygen content of the gas within the cylinder." Richey does not teach, fairly suggest or even imply these limitations.

Claims 16-19 are each allowable for at least the same reasons as claim 15, from which they depend, as well as the additional limitations therein.

E. Claim 22

Claim 22 stands rejected as allegedly anticipated by Richey.

Claim 22 specifically recites, "setting a volume of the bolus of therapeutic gas based on a sensed setting for continuous flow of therapeutic gas through a flow meter." Richey does not teach or fairly suggest any operational connection between a setting for continuous flow and a volume size of a bolus of therapeutic gas.

Claim 22 is allowable for at least the same reasons as claim 15 from which it depends, as well as the additional limitations therein.

F. Claim 23

Claim 23 stands rejected as allegedly obvious over Richey in view of Frye.

Richey is directed to an apparatus and method for forming oxygen-enriched gas and compression thereof for high-pressure mobile storage utilization. (Richey Title). In particular, in the Richey system oxygen-enriched gas is provided to the patient from the product tank 30,

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through a first pressure regulator 300 and a second pressure regulator 320. (Richey Col. 7, lines 28-35). Likewise oxygen-enriched gas is provided to cylinder 500 from the product tank 30, through pressure regulator 300, buffer tank 200 and compressor 100. (Richey Col. 7, lines 46-60). Thus, in Richey oxygen-enriched gas provided to the patient is tapped before the compressor 100. Frye is directed to an oxygen-delivery system with portable oxygen meter. (Frye Title).

Claim 23, by contrast, specifically recites, "a compressor operable to increase pressure of therapeutic gas provided at an inlet of the compressor to create a compressed therapeutic gas stream; a cylinder coupled to the compressed therapeutic gas stream; and a conserver coupled to the compressed therapeutic gas stream, the conserver operable to deliver a bolus of therapeutic gas during inhalation of a patient; wherein the system is operable to provide therapeutic gas from the cylinder when the compressor is not in operation." Thus, both the conserver and the cylinder couple to the compressed therapeutic gas stream created by the intensifier (compressor in Richey terminology). Richey taps the oxygen-enriched gas provided to the patient prior to the intensifier. Thus, if the contention of the Office Action dated September 21, 2004 is that the conserver of Frye merely couples to, or possibly replaces, Richey's flow meter 330 (see Richey's Figure 4 above), then the combination fails to teach or fairly suggest the limitations of claim 23 that require the conserver to be coupled to the compressed therapeutic gas stream created by the intensifier, and that "the system is operable to provide therapeutic gas from the cylinder when the compressor is not in operation."

If, on the other hand, the contention of the Office Action dated September 21, 2004 is that Frye's conserver is placed downstream of Richey's compressor, then the references are improperly combined. (See MPEP §2143.01). Richey clearly teaches splitting the oxygen-enriched gas source with part going to the patient, and the rest going to the compressor. (See, e.g., Richey Figure 4; Abstract). Thus, if the contention is that Frye's conserver supplies oxygen-enriched gas to a patient from the high pressure side of Richey's compressor 100, this changes the whole principle of operation of Richey of splitting the oxygen-enriched gas as between the patient and the compressor. Applicants therefore respectfully submit that, because of the changes to the principle of operation if combined in this manner, Richey taken with Frye do not teach or fairly suggest the limitations of claim 23.

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Based on the foregoing, Applicants respectfully submit that claim 23, and all claims which depend from claim 23 (claims 24-30), should be allowed.

G. Claim 31

Claim 31 stands rejected as allegedly anticipated by Richey.

Richey's oxygen sensors 265 and 360 test the oxygen-enriched gas as it exits the product tank 30 and before being applied to the compressor 100 or cylinder 500. (Richey Figures 2, 3 and 4).

Claim 31, by contrast, specifically recites, "a gas sense device coupled to the fill port, the **gas sense device operable to detect content of gas within the cylinder prior to filling.**" Richey does not teach or fairly suggest a gas sense device that can detect content of gas within the cylinder.

Based on the foregoing, Applicants respectfully submit that claim 31, and all claims that depend from claim 31 (claims 32-34), should be allowed.

H. Claim 37

Claim 37 stands rejected as allegedly obvious over Todd in view of Richey, and in further view of Frye. Applicants amend claim 37 to correct a typographical error.

Todd is directed to a cylinder filling medical oxygen concentrator. (Todd Title). When Todd's sensor 21 senses an inhalation on the nasal cannula 19, "the connection from the valve 14 to the accumulator 15 is closed and oxygen enriched air line 13 from oxygen concentrator 10 is connected through a valve passage 14c to the line 20 and the nasal cannula 19 to the patient." (Todd Col. 3, lines 56-61). Thus, the clear teaching of Todd is a conserver-type delivery.

Claim 37, by contrast, specifically recites, "an adjustable flow control device fluidly coupled to the first outlet [of the valve], **the adjustable flow control device operable to create a continuous flow of therapeutic gas at a selected flow rate;**" The Office Action suggests combining Richey's flow control device into Todd's system to meet the limitation "operable to create a continuous flow of therapeutic gas." However, this combination clearly changes the principle of operation of Todd, specifically directed to a conserver-type flow "alternately to a patient and to a circuit for filling an oxygen cylinder." (Todd Col. 3, lines 20-22). For this reason alone the proposed combination is improper and the claim 37 should be allowed.

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Moreover, to meet the conserver limitation, the Office Action suggests combining Frye's conserver to Todd's patient conduit 20. However, in the claimed system the adjustable flow control device couples to the first outlet of the valve, while the "conserver fluidly couple[s] to the therapeutic gas at the second pressure," i.e., after the intensifier. Thus, a system comprising Frye's conserver on Todd's patient conduit 20 fails to meet the claim limitations. For this additional reason claim 37 should be allowed.

Further still, claim 37 calls for "the volume of therapeutic gas released by the conserver is controlled by the selected flow rate of the adjustable flow device." Even if Todd, Richey and Frye are considered together (which Applicants do not admit is proper), there is no teaching in the references regarding "the volume of therapeutic gas released by the conserver is controlled by the selected flow rate of the adjustable flow device."

Based on the foregoing, Applicants respectfully submit that claim 37, and claim 38 which depend from claim 37, should be allowed.

IV. NEW CLAIMS

With this Response, Applicants present new claims 39-45. Applicants respectfully submit that these claims are allowable over the art of record.

III. CONCLUSION

Applicants respectfully request reconsideration and allowance of the pending claims and a timely Notice of Allowance be issued in this case. If the Examiner feels that a telephone conference would expedite the resolution of this case, he is respectfully requested to contact the undersigned.

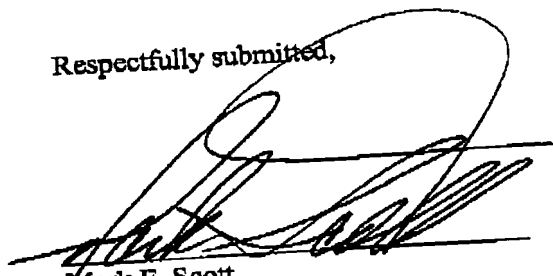
In the course of the foregoing discussions, Applicants may have at times referred to claim limitations in shorthand fashion, or may have focused on a particular claim element. This discussion should not be interpreted to mean that the other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims. Moreover, it should be understood that there may be other distinctions between the claims and the prior art which have yet to be raised, but which may be raised in the future.

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If any fees are inadvertently omitted or if any additional fees are required or have been overpaid, please appropriately charge or credit those fees to Conley Rose, P.C. Deposit Account Number 03-2769.

Respectfully submitted,



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